

# Institutional Capacity Assessment of District Disaster Management Authority

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## Abstract

*The formulation of capacity development strategies is based on the outcomes of capacity assessment. Based upon the experiences of various experts and stakeholders, it is proposed to realistically assess the existing multi-dimensional capacities of the Disaster Management Authorities. The well-analyzed results of such assessment would provide valuable recommendations to concerned authorities to further strengthen the institutional mechanism at desired levels and would also highlight the areas which need attention on a priority basis. The Institutional Capacity Assessment (ICA) of the Disaster Management Authorities will be a categorically organized study based on interviews, surveys, observations and analysis of the data and information available at the subsequent levels. Given in this context, appropriate methodologies in term of qualitative and quantitative methods include identifying the study domains on the basis of vulnerability of the region. After various discussions with expert in the field of disaster management relevant questionnaire would be developed. Then a series of Baseline Survey needs to be conducted in the intended regions which would involve collection of secondary and primary data.*

*The collected data would be analyzed and rating is assigned given to the different section of authorities followed by providing recommendations on the basis of performance. Then denomination would be done as High Concern, Moderate Concern and Lower Concern for disaster preparedness.*

## Keywords:

*Institutional Capacity, Capacity Assessment, District Disaster Management*

## Introduction

Himachal Pradesh is located in Western - Himalayas. The total geographical area of the state is 55,673 sq. kms. It consist of 12 distinct, 75 tehsil and 34 sub tehsil. The average annual rainfall is about 1111 mm. About 70 percent of precipitation is received in the monsoon season. It is prone to numerous disaster events. As evident from statistics, the frequency of disasters has increased dramatically. Natural disaster such as flash flood and landslide are very common in the state. Every year heavy loss is recorded and it readily affects the socio-economic conditions of the natives. "In the financial year 2014-15 state recorded 600 corers loss in the monsoon season", (Revenue Department of Himachal Pradesh, 2012: Himachal Pradesh State Disaster

Management Plan. Disaster Cell). On the basis of vulnerability matrix, out of 12 districts overall vulnerability of four districts is severely very high. These districts are Kinnaur, Kangra, Chamba and Kullu. Earthquake, Landslide and floods are the major Hazards in these districts. While other remaining districts the overall vulnerability ranges between moderate to high.

“According to 13<sup>th</sup> finance commission, Ministry of Finance, Government of India has allocated funds for the disaster management institutions. Around Rs. 525 crores have been allocated to the states for the building capacity in the administrative machinery. Out of total funds Himachal Pradesh has been receiving Rs. 4 crores every financial year since 2010” (Ministry of Home Affairs GoI, 2012)

In recent times the frequency of disasters has increased in Himachal Pradesh. Vulnerability of most districts varying from very high to high. Every year new technologies are introduced at National and State level. It is also crucial to strengthen our first responders i.e. district disaster

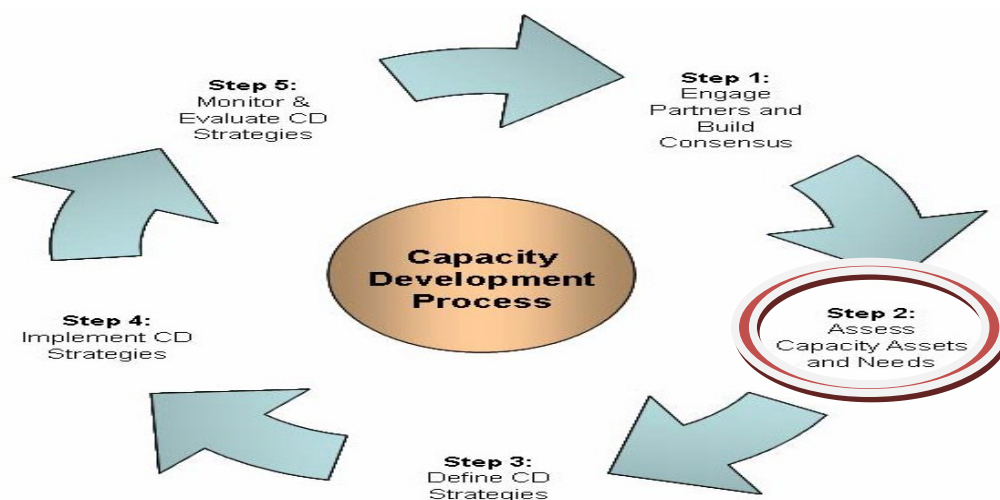
monument authorities and for this it is essential to draft capacity development (CD) strategies to strengthen district authorities in state. Lack of preparedness at district level would result in more loss during an incident. Therefore it is necessary that existing capacities should be evaluated periodically so that the loopholes could be mended in accordance with scientific methodology.

### Capacity Development

“Capacity development (CD) is a process through which the abilities to do so are obtained, strengthened, adapted and maintained over time.”

According to DM Act, 2005, Capacity building includes

- i) “Identification of existing resources and resources to be acquired or created.”
- ii) “Organisation and training of personnel and coordination of such training for effective management of disaster. (Disaster Management Act , 2005)



**Figure 1: Capacity development (CD) cycle**

Capacity development (CD) cycle involves the six steps. (United Nations WFP–

Philippines , 2011) These are engage partners and build consensus, assess capacity assets

and needs, define capacity development strategies, implement CD strategies and monitor and evaluate capacity development strategies.

Among them capacity assessment is important because the formulation of capacity development strategies is based on the findings of capacity assessment only. It is a continuous process of replacing existing resources and adding newer ones.

### **Institutional Capacity Assessments**

Institutional Capacity assessment (ICA) is a process to evaluate the existing capacity within an organization. It includes evaluation of core capacities, technical capacities and enabling environment capacities. It is an important step in capacity building cycles because existing loop holes are evaluated within an organization and new capacities will be added to full fill the desired goals. Based upon the experiences of various experts and stakeholders, it is proposed to realistically assess the existing multi-dimensional capacities of the District Disaster Management Authorities (DDMAs). The well-analyzed results of such assessment would provide valuable recommendations to the HPSDMA to further strengthen the institutional mechanism at district-level and would also highlight the areas which need attention on a priority basis. The Institutional Capacity Assessment (ICA) of all the DDMAs will be a categorically organized study which will be based on interviews, surveys, observations and analysis of the data and information available at the district-level. Keeping all aspects under consideration the overall objectives of the study can be summarized as follows:

- To map existing capacity development activities for disaster risk reduction.

- To Qualitative and Quantitative Assessment of Resources i.e. Human Resource, Technical Resource and Financial Resource.
- To identify key loop holes in capacity development.

### **Methodology**

Given in this context, appropriate methodologies in term of qualitative and quantitative methods were applied. Firstly districts were identified on the basis of vulnerability of the region. Then suitable model was developed for the institutional capacity assessment of District Disaster Management Authorities. After various discussions with expert personnel in the field of disaster management relevant questionnaire were developed. Then a series of Baseline Survey were conducted in the intended districts which involved collection of secondary and primary data. At the end the collected data was analyzed and rating was given to DDMAs followed by providing recommendations on the basis of performance. Methodology of the study included number of steps as follows:

- Identification of study areas and analysis of prevalent hazards.
- Development of method for capacity assessment.
- Collection of secondary data.
- Primary Data collection from interviews of DDMA employees and various consultants.
- Assignment of subsequent ratings on the basis of investigation of capacity.

### **Study Domain**

The study area included DDMAs of six districts of Himachal Pradesh. These districts were Bilaspur, Chamba, Kangra, Kullu, Mandi and Shimla. The vulnerability of these districts varied from very high to

moderate to various disasters. Out of six districts, the vulnerability of four districts varied from very high to high i.e. Chamba, Kangra, Mandi and Kullu. Vulnerability of Bilaspur and Shimla varied from moderate to high. (Revenue Department of Himachal Pradesh, 2012: Himachal Pradesh State Disaster Management Plan. Disaster Cell, 2012)

### Assessment Model

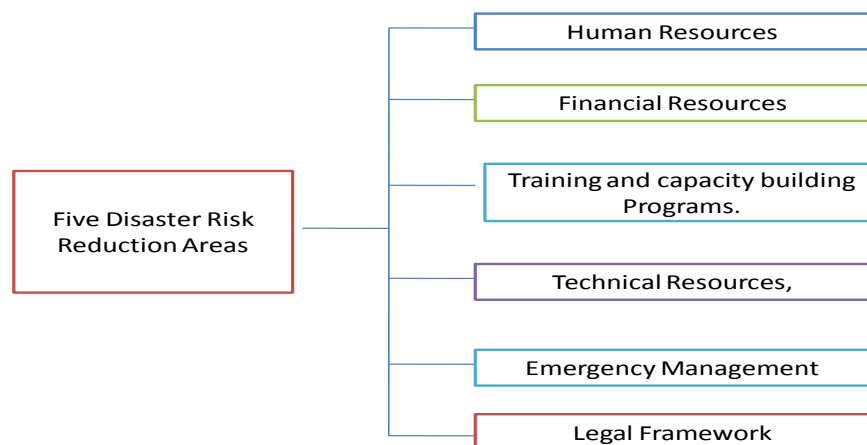
Institutional capacity assessment (ICA) was based on six indicators that were used to establish initial benchmarks to measure the organizational, functional, and operational and development systems and processes of District Authority. These indicators were driven from Disaster Risk Reduction (DRR) mainstreaming areas. “The DRR areas are: 1) Legal and Institutional Processes and Policies (2) Public Awareness and Capacity Building (3) Critical Services and Infrastructure Resiliency (4) Emergency

Preparedness, Response, and Recovery Planning (5) Development Planning, Regulation, and Risk Mitigation” (United Nations WFP– Philippines , 2011). Taking in account of these five core areas six indicators were set accordingly. The six indicators are Emergency Management, Technical Resources, Human Resources, Financial Resources, Legal Framework and Training and capacity building Programs.

These six indicators include all the aspects of Disaster Risk Reductions. The indicators are termed as Disaster Risk Reduction Indicators (DDRI) and explained as:

*Human Resource:* The indicator shows the human strength present and skills of employees working in the organizations.

*Financial Resource:* This indicator deals with funding system in the organization and how budgeting is done. It also includes the expenditure details.



**Figure 2:** Detail of Institutional capacity assessment (ICA)

*Training and capacity building Programs:* It includes the Capacity building trainings,

mock drills as well as the awareness activities conducted by organization.

*Technical Resource:* This indicator stands for the hardware and software capacity that required for the effective functioning of DDMA. It involves the various technical elements like Hazard, Risk and Vulnerability Analyses (HRVA) and various rescue equipments.

*Emergency Management:* This indicator involves the various processes that are required during emergency situation for the effective functioning of organizations.

*Legal framework:* It stands for the Policies and rule that are required for the functioning of organization. It also includes mainstreaming in disaster management field and various codes for making resilience environments.

### Rank Assignment

Considering Disaster Risk Reduction Indicator (DRRI), a set of questionnaires was developed for each indicator and conditions were drafted for individual indicator. Each one conditions is scaled 0 to 5. After scrutiny set of baseline survey questions indicator was assigned some numerical value.

Indictors rating	Rating
Legal Frame work	a
Emergency Management	b
Training and Capacity Building Programs	c
Human Resource	d
Technical Resource	e
Financial Resource	f

**Table1:** Details of rank Assignment

Where,

a= Aggregate of evaluated questionnaire value for legal framework indicator.

b= Aggregate of evaluated questionnaire value for emergency management indicator.

c = Aggregate of evaluated questionnaire value for Training and capacity building Programs indicator.

d = Aggregate of evaluated questionnaire value for human resource indicator.

e =Aggregate of evaluated questionnaire value for Technical resource indicator.

f= Aggregate of evaluated questionnaire value for Financial resource indicator.

Then numerical value of individual indicator was added to calculate rank of DDMA's.

$$\text{Rank Value} = (a+b+c+d+e+f)$$

### Conditions for Ranking

The individual Rank value was calculated for each district DDMA and then the ranking was:

1) If rank value is highest, it is ranked first. It shows that district is more prepared in the field of disaster management.

2) If rank value is lowest, it is ranked last. It shows that the district is not prepared .

3) If rank value of the two districts is equal then the ranking is given on the basis of vulnerability of the district. Higher vulnerable district is ranked lower as compared to other one.

Survey for the institutional capacity assessment of DDMA incurred for four months. During this period all the district authorities were visited. The interviews were conducted to various responsible personnel of DDMA like Additional District Magistrate (ADM), District revenue officer (DRO) and Relief assistant.

### DATA ANALYSIS AND OUTCOMES

Survey has been conducted in the identified District authorities .The primary data has been collected for all the six Disaster Risk Reduction Indicators .Aggregate value is given to all indicators .Rank of all the DDMA's has been calculated by adding the individual aggregate values of indicators .

### Legal Framework Indicator

It stands for the Policies and rule that are required for the functioning of organization.

It also includes mainstreaming in disaster management field.

Where;

0= Non existing

1 = Existing but no improvement made

2= Needs improvement

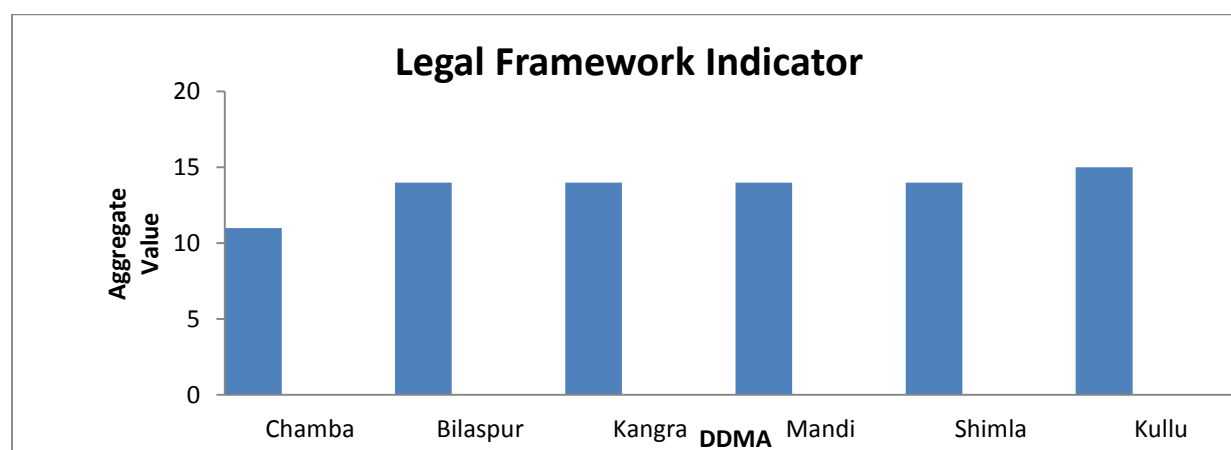
3=Moderate condition (little improvement required)

4=Good condition (No need of immediate improvement)

5= Excellent condition (capacity fully achieved)

**Table 2:** Details of value assign to Questionnaires of Legal framework indicator

DDMA	DDMA Functional	DDMA Structure accordance with Act	DDMA adhere Indian codes ( building codes)	Disaster management plan	Aggregate Value(a)
Bilaspur	5	5	1	3	14
Chamba	5	5	1	0	11
Kangra	5	5	1	3	14
Kullu	5	5	1	4	15
Mandi	5	5	1	3	14
Shimla	5	5	1	3	14



**Figure 3:** Performance of DDMA's for Legal framework indicator

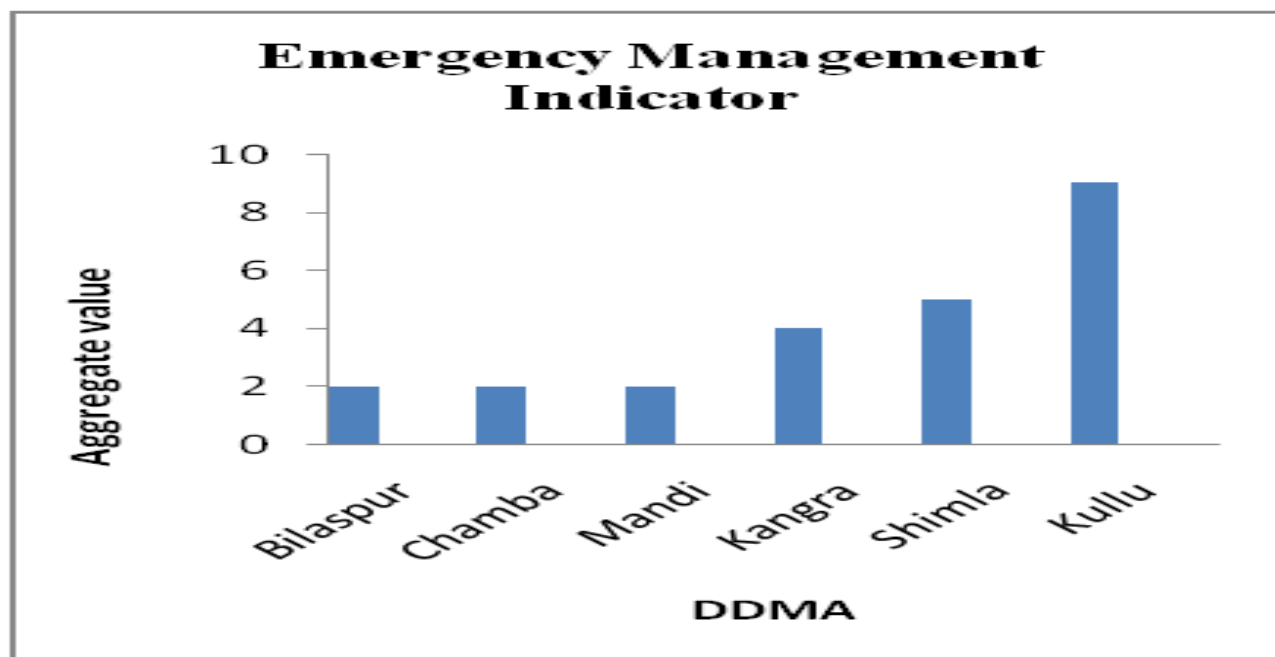


It mandatory for district authorities to adhere the building codes but none of district is promoting safe construction codes. Chamba district do not prepared District disaster management plan, while other prepared DDMP in 2012, for this indicator DDMA Kullu has performed better as compared to others

### Emergency Management Indicator

This indicator involves the various processes that are required during emergency situation for the effective functioning of district disaster management authority. Table 3: Details of value assign to Questionnaires of Emergency Management Indicator

DDMA	EOC setup	Presence of IAG	EWS functional for multi hazard or for a particular hazard	EWS system connected with EOC	Aggregate Value(b)
Bilaspur	0	0	2	0	2
Chamba	0	0	2	0	2
Kangra	2	0	2	0	4
Kullu	2	5	2	0	9
Mandi	0	0	2	0	2
Shimla	3	0	2	0	5



**Figure 4:** Performance of DDMA for Emergency Management indicator

On the basis of assign methodology Kullu District obtained maximum rating for the

fact that it has some peculiars features like Inter-Agency Group (IAG) and Emergency

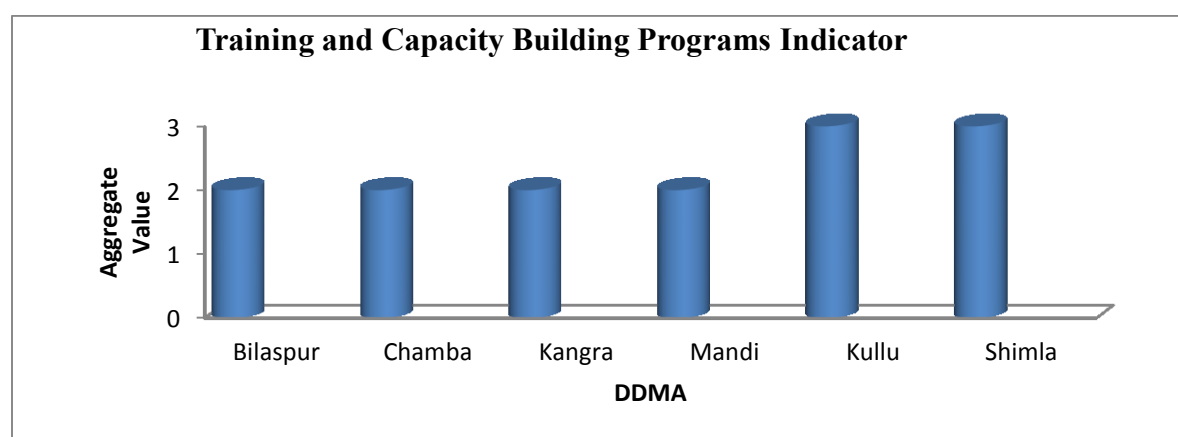
Operation Center (EOC) which all districts lack. Since Kullu and Kangra has setup EOC but it is not fully functional while EOC in Shimla district is functional. None of district has connected their EOC with early warning system. Rests of districts are rated as per the

quorum. For this indicator Kullu DDMA has performed better as compared to others.

### Training and Capacity Building Programs Indicator

It also includes the Capacity building trainings, mock drills as well as the awareness activities done by DDMA.

Table 4: Details of value assign to Questionnaires of Training and Capacity Building Programs Indicator  
Where,  
0= No activity conducted , 1= Activity Conducted



**Figure 5:** Performance of DDMA's for Training and Capacity Building Programs Indicator

The all districts have conducted various programs at their level. Kullu and Shimla DDMA's are rated highest while others are rated below. For this indicator Kullu and Shimla have performed better than other districts

### Human Resource Indicator

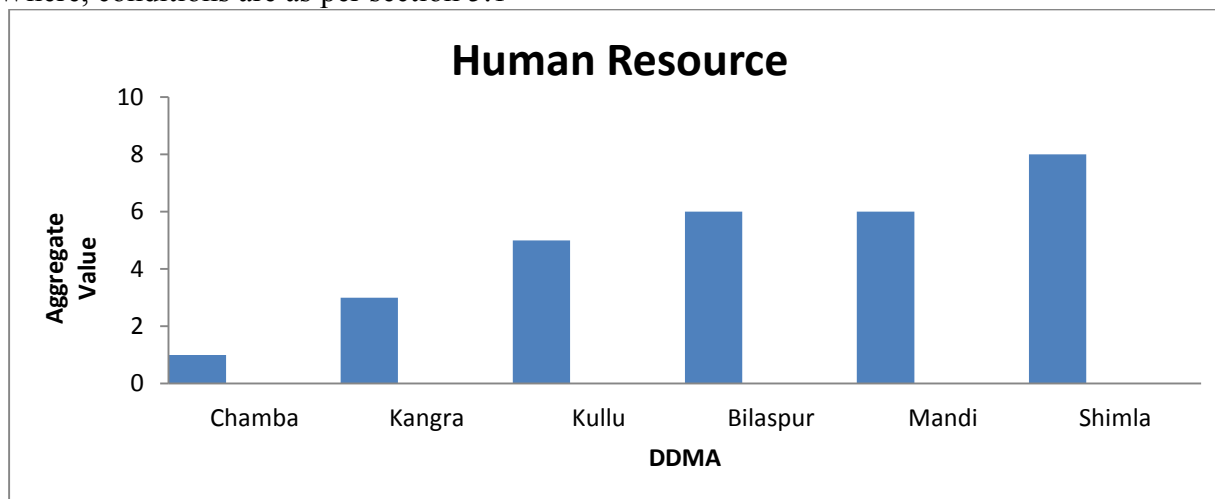
This indicator shows the human strength present and skills of employees that are required for the effective functioning of district disaster management authority.

**Table 5:** Details of value assign to Questionnaires of Human Resource indicator

DDMA	Employees in DDMA	volunteer's data base	Data base of experts trainings	Technical Expert	Aggregate Value(d)
Bilaspur	1	2	3	0	6
Chamba	1	0	0	0	1
Kangra	1	2	0	0	3
Kullu	1	4	0	0	5
Mandi	1	2	3	0	6
Shimla	1	4	3	0	8



Where, conditions are as per section 5.1



**Figure6:** Performance of DDMA's for Emergency Management indicator

None of the district has dedicated employees for DDMA. Only some Government personnel are temporarily assigned for basic operational purposes. So districts are given equal weightage. None of the districts have technical experts to take care of DDMA activities. Shimla district has updated

volunteer database while other district lack of updated database. Mandi and Shimla districts have prepared data base of empanel personnel for capacity building trainings. For this indicator DDMA Shimla performed better as compared to others.

### Technical Resource Indicator

DDMA	HRVA mapping	Resource mapping	DDMA has its own website	Equipment and peripherals	GIS software or other software	Aggregate Value(e)
Bilaspur	0	3	0	3	0	6
Chamba	0	0	0	3	0	3
Kangra	0	3	5	3	0	11
Kullu	3	4	0	3	0	10
Mandi	0	3	0	3	0	6
Shimla	3	3	5	3	0	14

**Table 6:** Details of value assign to Questionnaires of Technical Resource indicator

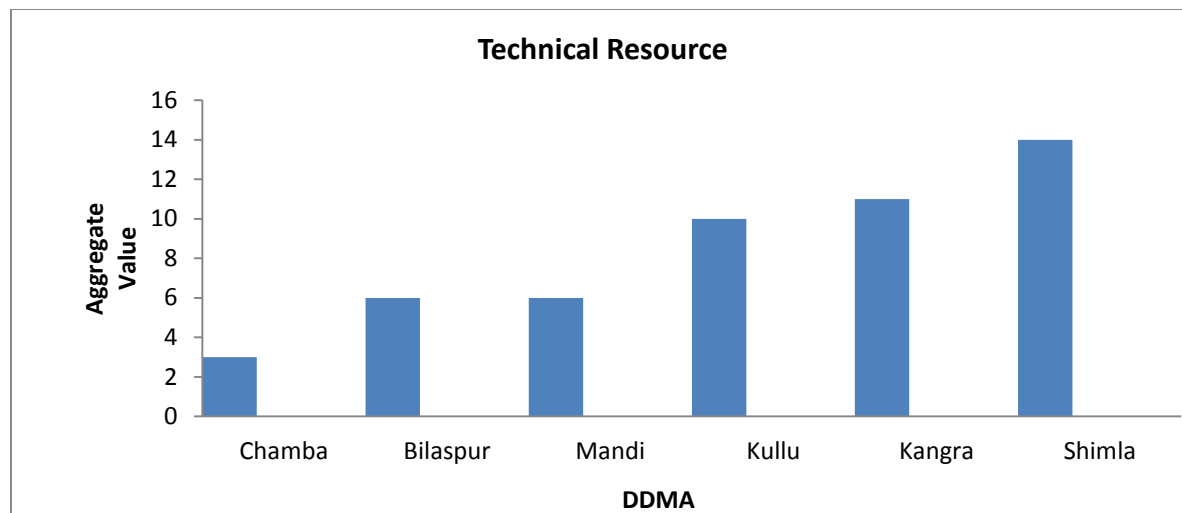
Where, conditions are as per section .1

Shimla and Kullu district has conducted Hazard risk and vulnerability mapping. The level of HRVA is L1 i.e. macro level. Except Chamba district other districts have conducted resource mapping. Kullu district

has updated resource inventory while other have done in 2012. All the districts have purchased various rescue equipments according to funds allocated so each district have assigned equal weightage for this.

Shimla and Kangra districts have fully functional individual DDMA website. Considering all the factors Shimla district is

rated highest, Kangra on second and Chamba at lowest level for this indicator



**Figure6:** Performance of DDMA's for Technical Resource indicator

### Financial Resource Indicator

State Authority gives funds to distinct authorities for activities such as awareness

generation, capacity building trainings, preparation of training materials and for updating disaster management plans.

DDMA	Fraction of fund utilized out of total fund	Assign Value for Financial Resources Indicator
Bilaspur	.20	1
Chamba	.17	1
Kangra	.18	1
Kullu	.42	3
Mandi	.48	3
Shimla	.38	2

**Table7:** Details of Fraction of fund utilized out of total fund

Where,

0= Total funds remained unused

1 =  $\frac{1}{4}$  Fraction of fund utilized out of Total fund

2 =  $\frac{1}{3}$  Fraction of fund utilized out of Total fund

3=  $\frac{1}{2}$  Fraction of fund utilized out of Total fund

4=  $\frac{2}{3}$  Fraction of fund utilized out of Total fund

5 = Full utilization

### Assign Ranking

According the evaluated rank value, ranking is given to the DDMA's.

Ranking	District	Rank value
1	Shimla	46
2	Kullu	45
3	Kangra	35
4	Mandi	33
5	Bilaspur	31
6	Chamba	20

Table8: Ranking of DDMA's

### Outcomes

The six disaster risk reduction indicators are evaluated for each authority. DDMA Chamba secure lowest score in spite of very high vulnerability. This exhibits the poor preparedness level district Chamba. DDMA Shimla and Kullu performed better

than other districts, while rest of all these districts also exhibit the poor condition in the field of disaster management. These six study domains are classified on priority levels as:

Priority levels	Higher concern	Moderate Concern	Lower Concern
DDMA	Chamba	Bilaspur , Mandi and Kangra	<b>Shimla and Kullu</b>

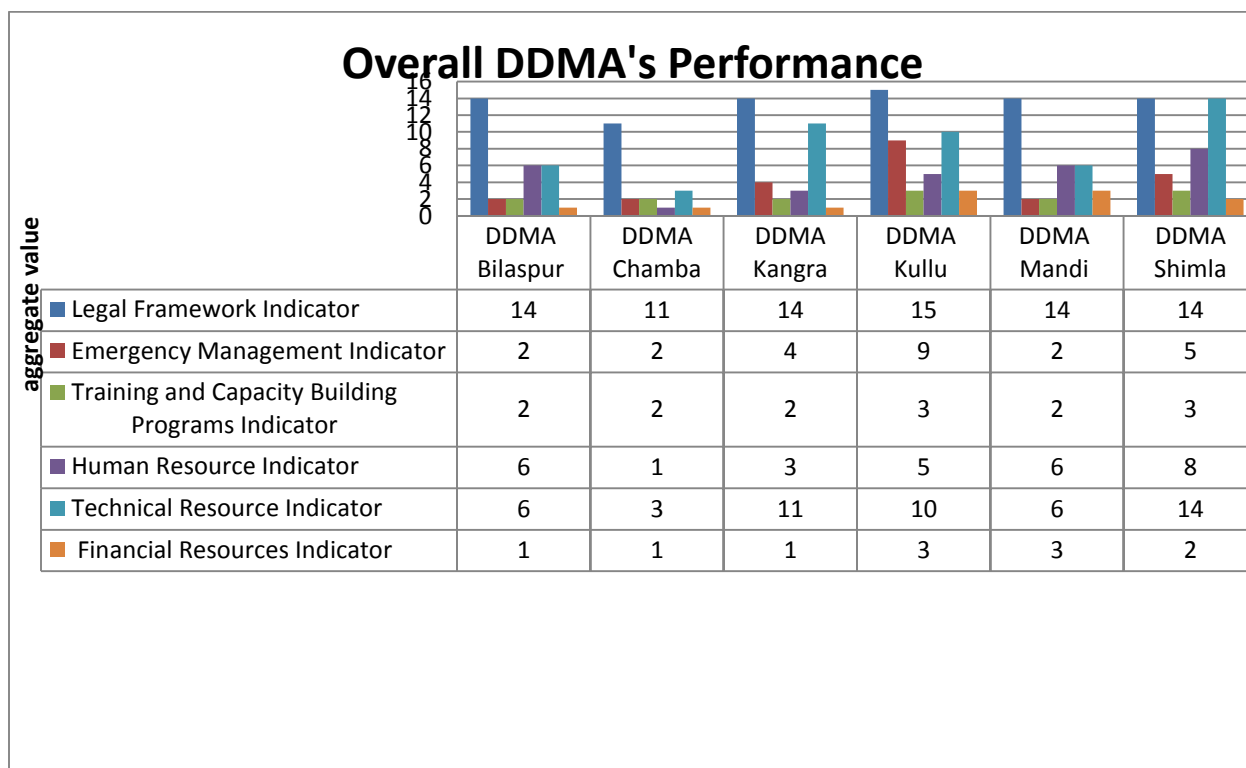
**Table 9:** Level of priorities

DDMA Chamba required dedicated efforts to improve its conditions regarding DRRM. While district authorities of Bilaspur, Mandi and Kangra have to revise their capacities. Shimla and Kullu have to upgrade their strengths. For each district authority existing strengths and loopholes mentioned in the Table 8.

Some of the key gaps have been identified which are:

1. Inadequate understanding of the provisions of the Law by district authorities and other stakeholders particularly on their respective roles.

2. Difficulties in introducing the mainstreaming process in plans, programs and projects.
3. Lack of Disaster Risk Reduction and Management (DRRM) plans and absence of technical capacity for DRRM planning.
4. Lack of capacity development strategies at local level.
5. Inadequate capacities in several key functional areas of Disaster Risk Reduction (DRR). The key areas such as Emergency Communication, Public Awareness and Capacity Building and Knowledge Management.



**Figure.8:** overall performance

## CONCLUSION

Himalayan States are most vulnerable region for numerous hazards. Earthquake, landslide and flash floods are common incidents in this region. During recent time various prediction are published regarding the vulnerability of Himalayan States for the massive destruction in future time. It is an alarming situation for the governments as well to the individuals.

This study has been conducted in the six districts of Himachal Pradesh. Out of six districts, overall vulnerability of four districts is very high. These are Chamba, Kullu, Mandi and Kangra. The two key issues have been identified during study .1) utility of funds: Each district has sufficient

funds but expenditures of funds are below standards. Authorities are utilizing fraction of total available funds.2) Lack of Human Resource: None of the authority has dedicated full time employee.

Study results shows that authorities have limited capacities related to preparedness, prevention and mitigation activities. Recommendations have been given for authorities on the basis of identified existing loops of district authorities.

For implementing DM holistic approach, State Authority should appoint experts at state as well as at district level and should take initiative for capacity building of different stakeholders. The stakeholders working in the field of DM should adopt the capacity development strategies

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